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GREAT MOMENTS IN XXTH CENTURY MATHEMATICS

In volume 20, number 2, of *Mathematical Intelligencer* our attention was drawn to an article by S. Smale where he mentioned, in Hilbert style, a number of mathematical problems that he thinks will be important in the future. Well, we decided to ask a number of mathematicians not for a similar list of problems but for their answer to the following question:

If you had to mention one or two great moments in XXth century mathematics which one(s) would you pick up?

The choices of Professor José María Montesinos (Universidad Complutense de Madrid, Spain) are given below.

“For me the following are really remarkable moments:

The relationship of 3-manifold topology and the Theory of knots, as Dehn’surgery on links and branched covering spaces of Alexander.

Seifert discovery and classification of Seifert manifolds, central concept in 3-manifold topology and Knot Theory.

John Milnor’s discovery of distinct differentiable structures for S^7 , so starting differential topology.

J. H. C. Whitehead’s discovery of a new open, contractible 3-manifold, so starting the train of ideas ending in the proof of the topological Poincaré conjecture in dimension 4.

Papakyriakopoulos’s proof of Dehn’s Lemma and other basic 3-dimensional geometric theorems, so starting modern 3-dimensional topology.

William Thurston’s observation that the completion of certain incomplete hyperbolic structures in the complement of the figure 8 knot gives rise to Dehn surgery, leading him to conjecture that hyperbolic manifolds are in the center of 3-manifold topology.

It is likely that 20th Century mathematics will have as one of the most important developments, Knot Theory.”

